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APPLICANT : TONEN CORP;

INVENTOR : SAKURADA SATOSHI;

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TITLE : ELECTROLYTIC THIN FILM

ABSTRACT : PURPOSE: To obtain hgh ionic conductivity in an electrolytic thin film filling vacant holes of a solid high polymeric porous thin film with ionic conductive material, by treating the surface of the vacant holes of the electrolytic thin film by surfactants.

CONSTITUTION: A perfluoroalkyl amine oxide of 5wt.% is dissolved into the mixed solvent of water and iso-propanol (mixing ratio of 4:1 in volume ratio), and a polyethylene fine porous film (25μm in thickness) is immersed into the obtained solution for two hours, and washed by pure water. The film is dried at 50°C in vacuum, and a surface treated film is formed. The film is charged with the electrolytic liquid which is formed by dissolving $LiClO_4$ into the mixed solution of polypropylene carbonate and dimethoxy ethane (mixing ratio of 1:1 in volume ratio) and obtaining a concentration of 1mol/l. The ionic conductivity of this film is $3.2\times10^{-3}\Omega^{-1}cm^{-1}$. Since the surface of
the vacant hole on the solid high polymeric porous thin film is treated by surfactants, the mobility of the ionic conductive body for charge is improved, and the ionic conductivity of the electrolytic thin film is improved, and the electrolytic liquid charge is facilitated.